Take Test: Quiz 4.7

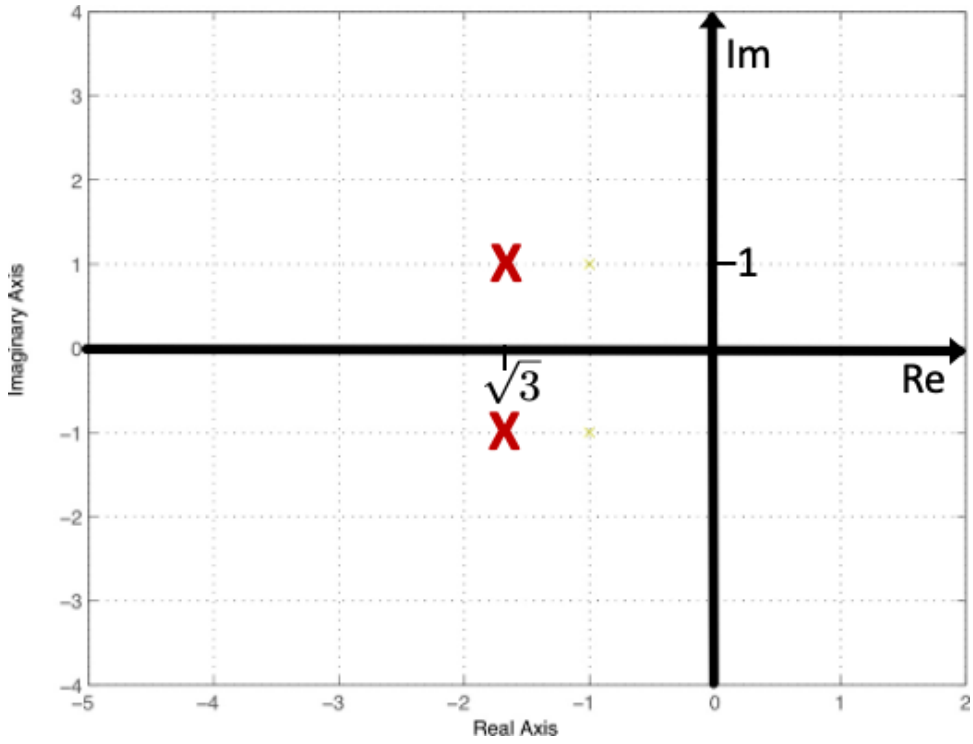
Test Information

Description	
Instructions	
Multiple Attempts	This test allows multiple attempts.
Force Completion	This test can be saved and resumed later.

Question Completion Status:

QUESTION 1 **1 points** Saved

Compute the damping ratio and natural frequency for the system whose poles and zeros are shown in the attached plot. Which of the following is correct?



- $\zeta = 1/2, \omega_n = \sqrt{3}$
- $\zeta = 1, \omega_n = 2/\sqrt{3}$

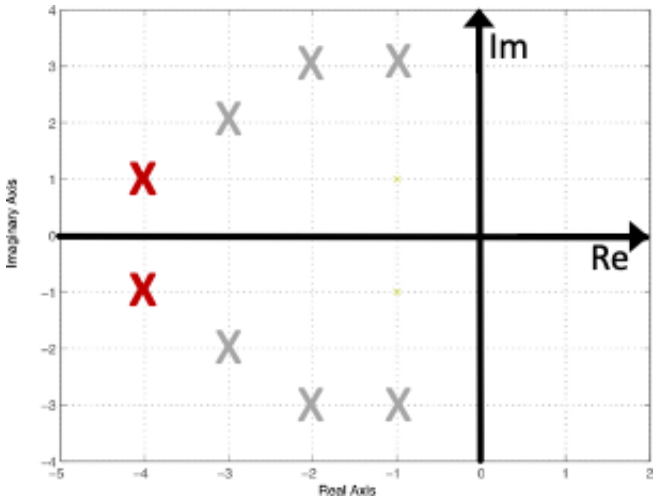
Click Save and Submit to save and submit. Click Save All Answers to save all answers.

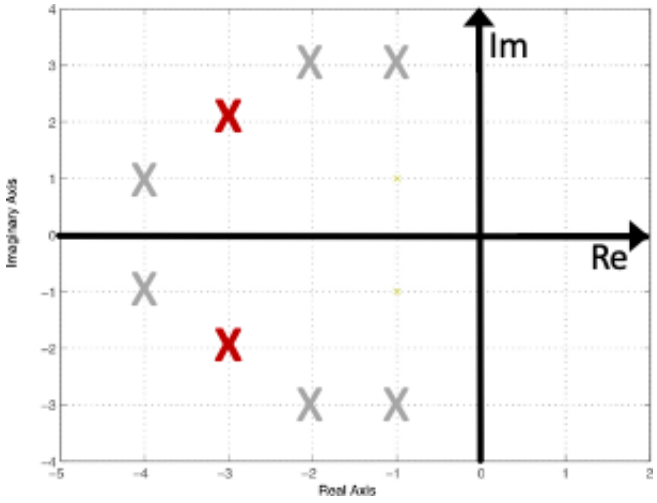
- $\zeta = 1/\sqrt{3}, \omega_n = 2$

QUESTION 2

1 points Saved

Which of the following pole pairs have a damping ratio closest to 1? (All four pole pairs are plotted to make comparisons easy, however, the pole pair under consideration is bold and red; others are grey.)


Im
Re
Imaginary Axis
Real Axis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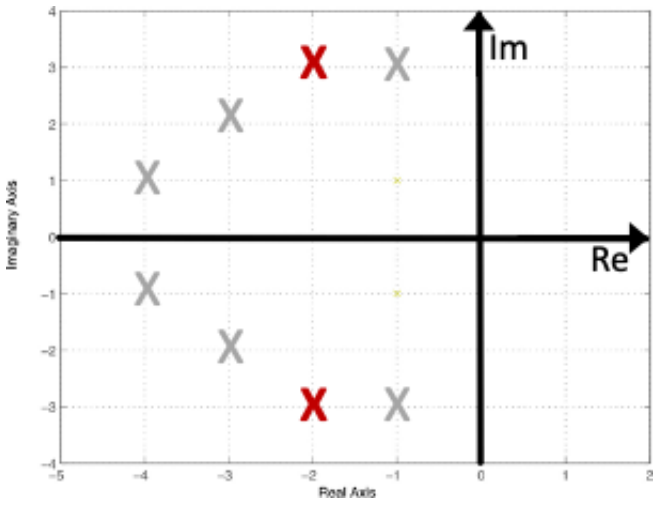
Real Axis


Im
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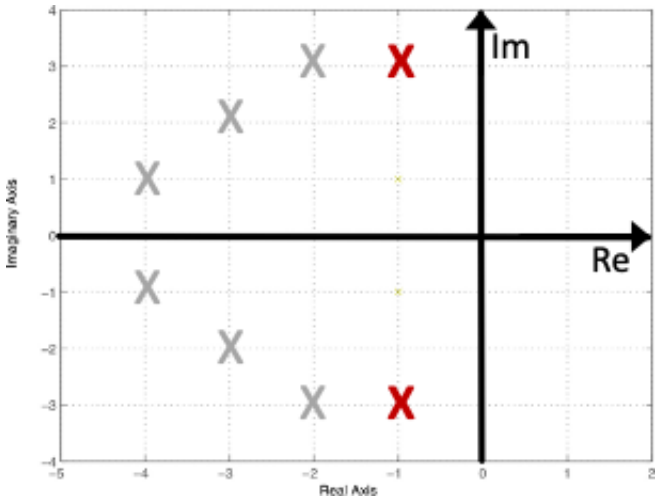
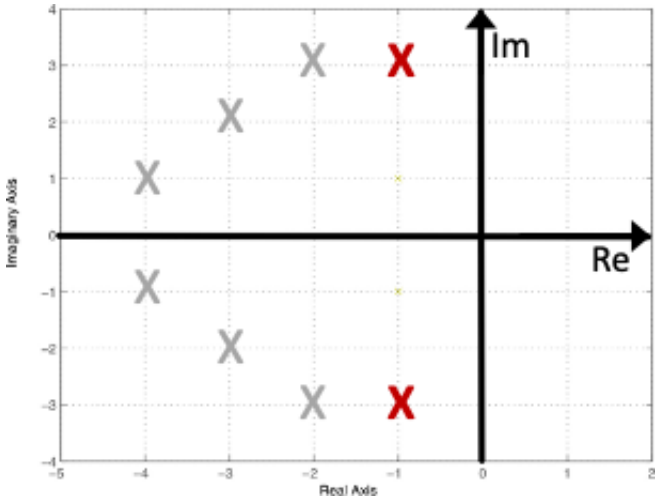
Real Axis

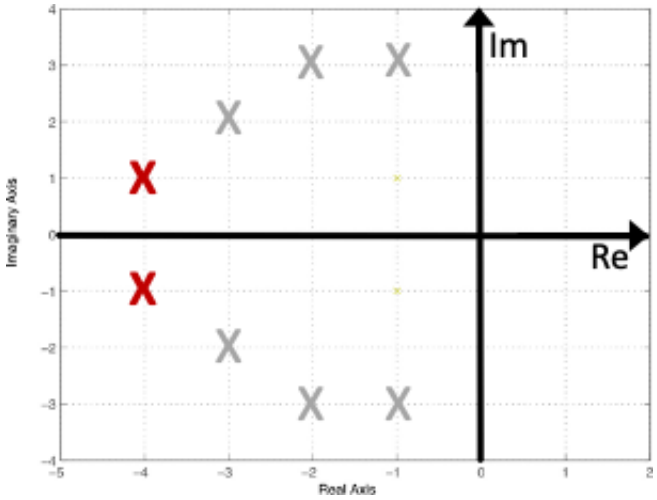


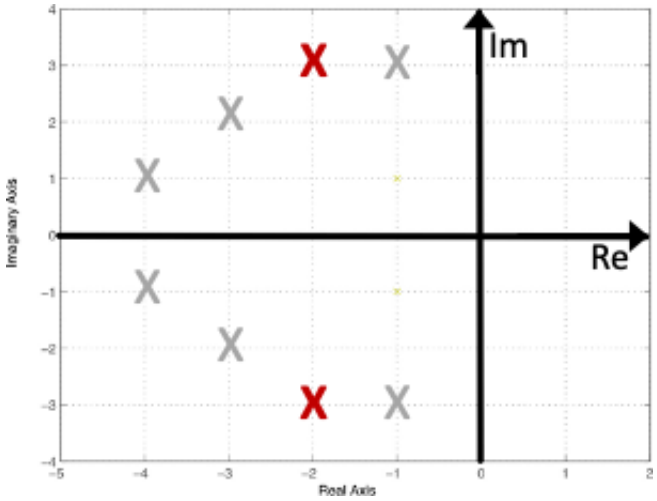
QUESTION 3

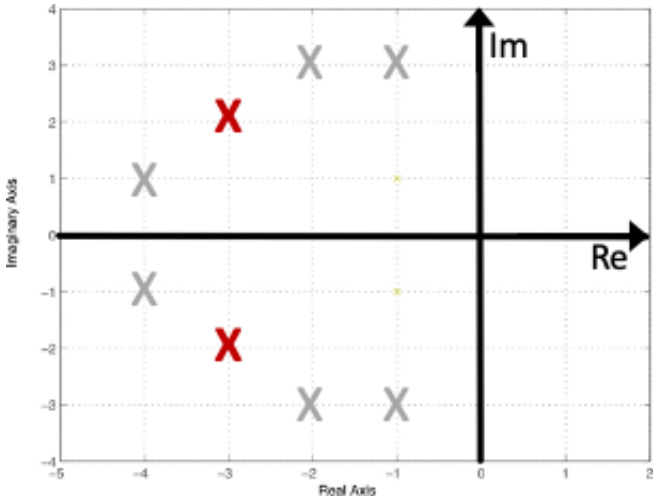
1 points Saved

Which of the following pole pairs (color-coded) have the smallest damping ratio? (All 4 pole pairs are plotted to make comparisons easy, however, the pole pair under consideration is bold and red; others are grey.)





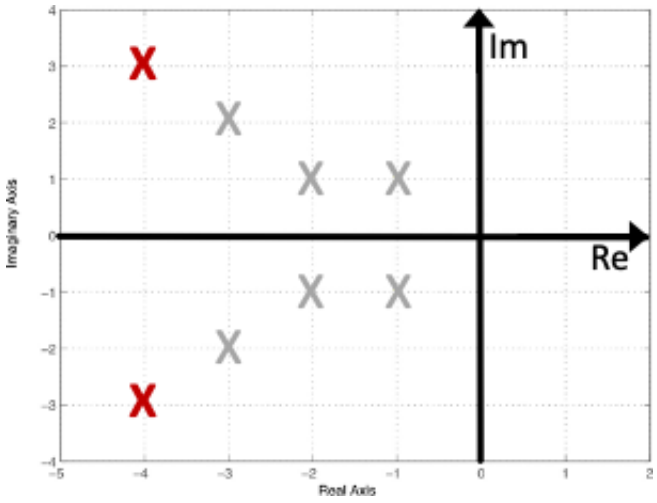




QUESTION 4

1 points Saved

Which of the following pole pairs (color coded) have the highest natural frequency? (All four pole pairs are plotted to make comparisons easy, however, the pole pair under consideration is bold and red; others are grey.)


Im
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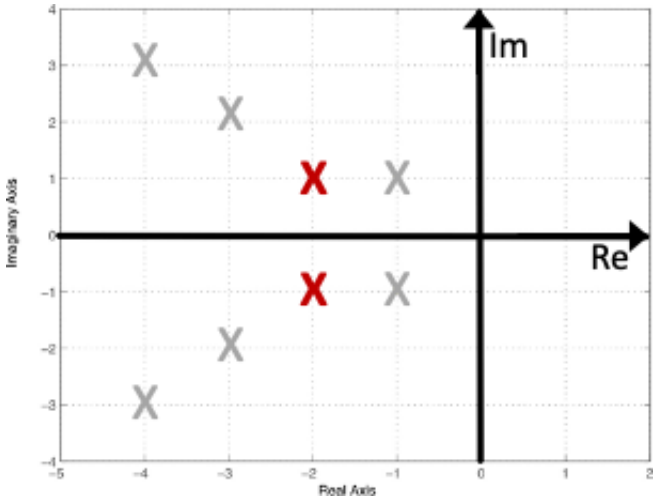
Imaginary Axis
Real Axis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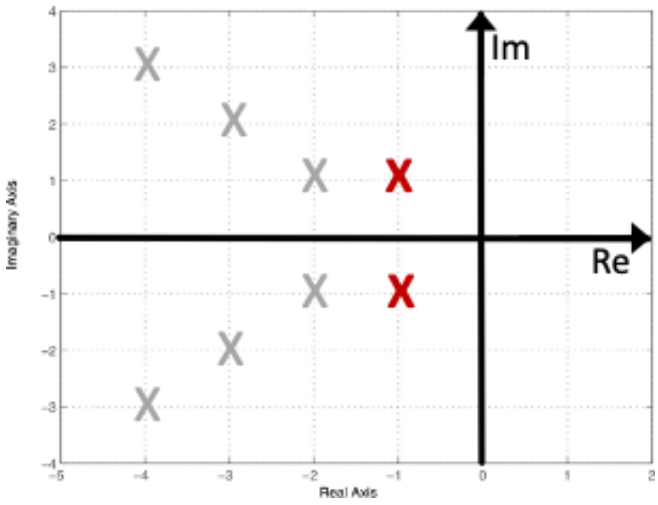
Imaginary Axis
Real Axis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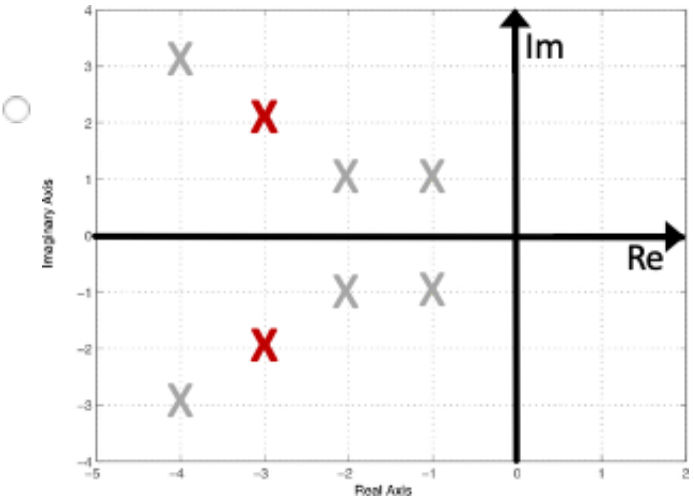
Imaginary Axis
Real Axis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Real Axis